LISTING OF CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the present application:

1. (Original) A method of fabricating a piezoelectric composite apparatus, comprising the steps of:

providing a plurality of wafers of piezoelectric material;

bonding the wafers together with an adhesive material to form a stack of alternating layers of piezoelectric material and adhesive material, the stack having a thickness;

cutting through the stack in a direction substantially parallel to the thickness of the stack and across the alternating layers of piezoelectric material and adhesive material to provide at least one piezoelectric fiber sheet comprising a plurality of piezoelectric fibers in juxtaposition to adhesive material, the at least one piezoelectric fiber sheet having a first side and a second side;

providing a first film having a first conductive pattern and a second conductive pattern formed thereon, the first conductive pattern being electrically isolated from the second conductive pattern, the first and second conductive patterns each having a plurality of electrodes that cooperate to form a pattern of interdigitated electrodes;

providing a second film;

bonding the second film to the second side of the at least one piezoelectric fiber sheet; and

bonding the first film to the first side of the at least one piezoelectric fiber sheet such that the conductive patterns of the first film electrically contact the piezoelectric fibers of the at least one piezoelectric fiber sheet.

2. (Original) The method according to claim 1 wherein the wafer of piezoelectric material comprises a monolithic piezoelectric material.

3. (Original) The method according to claim 1 wherein each piezoelectric fiber has a substantially rectangular cross-section.

4. (Original) The method according to claim 1 wherein at least one of the conductive patterns is made of copper.

5. (Original) The method according to claim 1 wherein the second film has a first conductive pattern and a second conductive pattern, the first conductive pattern of the second film being electrically isolated from the second conductive pattern of the second film, the first and second conductive patterns of the second film each having a plurality of electrodes that cooperate to form a pattern of interdigitated electrodes, and the step of bonding the first film further comprises the step of positioning the first film so that the conductive patterns of the first film are substantially aligned with the conductive patterns of the second film.

6. (Original) The method according to claim 5 further comprising attaching electrically conductive extensions to the first and second conductive patterns of the first film and attaching electrically conductive extensions to the first and second conductive patterns of the second film.

7. (Original) The method according to claim 1 wherein the step of bonding the second film further comprises applying an epoxy to the at least one piezoelectric fiber sheet.

8. (Original) The method according to claim 5 wherein the first film and the second film each have a longitudinally extending axis and the step of cutting produces at least one piezoelectric sheet having a plurality of piezoelectric fibers that extend in the direction of the longitudinal axes of the first and second films.

9. (Original) The method according to claim 8 wherein each interdigitated electrode of the first and second conductive patterns extends in a direction that is substantially perpendicular to the longitudinally extending axes of the first and second films and substantially perpendicular to the longitudinally extending direction of the plurality of piezoelectric fibers.

10. (Original) The method according to claim 1 wherein the second film has a first side and a second side, and the step of bonding the second film comprises:

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applying an adhesive layer to the first side of the second film;

placing the first side of the second film on the second side of the at least one piezoelectric fiber sheet; and

curing the adhesive layer.

11. (Original) The method according to claim 10 wherein the first film has a first side and a second side, and the step of bonding the first film comprises:

applying a second adhesive layer to the first side of the first film;

placing the first side of the first film on the first side of the at least one piezoelectric fiber sheet; and

curing the second adhesive layer.

12. (Original) The method according to claim 1 further comprising the step of attaching electrically conductive extensions to the first and second conductive patterns.

13. (Withdrawn) A method of fabricating a plurality of piezoelectric fibers, comprising the steps of:

providing a plurality of wafers of piezoelectric material;

bonding the wafers together with an adhesive material between each wafer to form a stack of alternating layers of piezoelectric material and adhesive material, the stack having a thickness; and

cutting through the stack in a direction substantially parallel to the thickness of the stack and across the alternating layers of piezoelectric material and adhesive material to provide at least one piezoelectric fiber sheet comprising a plurality of piezoelectric fibers in juxtaposition to the adhesive material.

14. (Withdrawn) The method according to claim 13 wherein the wafer of piezoelectric material comprises a monolithic piezoelectric material.

15. (Withdrawn) The method according to claim 13 wherein each piezoelectric fiber has a substantially rectangular cross-section.

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16. (Original) A piezoelectric composite apparatus made by a process comprising:

providing a plurality of wafers of piezoelectric material;

bonding the wafers together with an adhesive material to form a stack of alternating layers of piezoelectric material and adhesive material, the stack having a thickness;

cutting through the stack in a direction substantially parallel to the thickness of the stack and across the alternating layers of piezoelectric material and adhesive material to provide at least one piezoelectric fiber sheet comprising a plurality of piezoelectric fibers in juxtaposition to adhesive material, the at least one piezoelectric fiber sheet having a first side and a second side;

providing a first film having a first conductive pattern and a second conductive pattern formed thereon, the first conductive pattern being electrically isolated from the second conductive pattern, the first and second conductive patterns each having a plurality of electrodes that cooperate to form a pattern of interdigitated electrodes;

providing a second film;

bonding the second film to the second side of the at least one piezoelectric fiber sheet; and

bonding the first film to the first side of the at least one piezoelectric fiber sheet such that the conductive patterns of the first film electrically contact the piezoelectric fibers of the at least one piezoelectric fiber sheet.

17. (Original) The apparatus according to claim 16 wherein the wafer of piezoelectric material comprises a monolithic piezoelectric material.

18. (Original) The apparatus according to claim 16 wherein each piezoelectric fiber has a substantially rectangular cross-section.

19. (Original) The apparatus according to claim 16 wherein at least one of the conductive patterns is made of copper.

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20. (Original) The apparatus according to claim 16 wherein the second film has a first conductive pattern and a second conductive pattern, the first conductive pattern of the second film being electrically isolated from the second conductive pattern of the second film, the first and second conductive patterns of the second film each having a plurality of electrodes that cooperate to form a pattern of interdigitated electrodes, and the step of bonding the first film further comprises the step of positioning the first film so that the conductive patterns of the first film are substantially aligned with the conductive patterns of the second film.

21. (Original) The apparatus according to claim 20 further comprising attaching electrically conductive extensions to the first and second conductive patterns of the first film and attaching electrically conductive extensions to the first and second conductive patterns of the second film.

22. (Original) The apparatus according to claim 16 wherein the step of bonding the second film further comprises applying an epoxy to the at least one piezoelectric fiber sheet.

23. (Original) The apparatus according to claim 20 wherein the first film and the second film each have a longitudinally extending axis and the step of cutting produces at least one piezoelectric fiber sheet having a plurality of piezoelectric fibers that extend in the direction of the longitudinal axes of the first and second films.

24. (Original) The apparatus according to claim 23 wherein each interdigitated electrode of the first and second conductive patterns extends in a direction that is substantially perpendicular to the longitudinally extending axes of the first and second films and substantially perpendicular to the longitudinally extending direction of the plurality of piezoelectric fibers.

25. (Original) The apparatus according to claim 16 wherein the second film has a first side and a second side, and the step of bonding the second film comprises:

applying an adhesive layer to the first side of the second film;

placing the first side of the second film on the second side of the at least one piezoelectric fiber sheet; and

curing the adhesive layer.

26. (Original) The apparatus according to claim 25 wherein the first film bas a first side and a second side, and the step of bonding the first film comprises:

applying a second adhesive layer to the first side of the first film;

placing the first side of the first film on the first side of the at least one piezoelectric fiber sheet; and

curing the second adhesive layer.

27. (Original) The apparatus according to claim 16 wherein the process for making the piezoelectric composite apparatus further comprises the step of attaching electrically conductive extensions to the first and second conductive patterns.

28. (Withdrawn) A plurality of piezoelectric fibers made by a process comprising:

providing a plurality of wafers of piezoelectric material;

bonding the wafers together with an adhesive material between each wafer to form a stack of alternating layers of piezoelectric material and adhesive material, the stack having a thickness; and

cutting through the stack in a direction substantially parallel to the thickness of the stack and across the alternating layers of piezoelectric material and adhesive material to provide at least one piezoelectric fiber sheet.

29. (Withdrawn) The plurality of piezoelectric fibers according to claim 28 wherein the wafer of piezoelectric material comprises a monolithic piezoelectric material.

30. (Withdrawn) The plurality of piezoelectric fibers according to claim 28 wherein each piezoelectric fiber has a substantially rectangular cross-section.

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